

S.N. 10/764,401
Response dated February 2, 2007
Reply to Office Action of November 15, 2006

AMENDMENTS TO THE DRAWINGS:

The attached Replacement Sheet includes changes to Figure 1, and replaces the original sheet including Figure 1. The attached Annotated Sheet shows the changes made to Figure 1, namely, elements 45, 63, and 70 have been removed.

APPENDIX Attachment: 1 Replacement Sheet

1 Annotated Sheet

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REMARKS

Applicant has carefully reviewed the Office Action mailed November 15, 2006. In view of the foregoing amendments and the following remarks, Applicant respectfully requests reconsideration of claims 1-8, 10-14, and 16-28, and allowance of the same.

Responsive to the Examiner's objections to the figures and specification, Applicant submits herewith one Replacement Sheet containing a revised Figure 1, along with a related Annotated Sheet showing the changes made. The "Amendments to the Drawings" section above specifically discusses the changes to Figure 1. Also, Applicant submits a specification amendment to correct the reference number to the agitator and wand, as shown in the "Amendments to the Specification." However, no new matter is added. In view of these amendments and comments, Applicant respectfully submits that the Examiner's objections to the specification and figures have been overcome.

The Examiner also objects to claims 10 and 12-14 under 35 U.S.C. §112. In response, Applicant amends claim 10 to further clarify the "first motor" and "second motor" elements. Applicant also amends claim 12 to change "one" to "is one," thus further clarifying the claim. Applicant respectfully submits that these amendments overcome the objections to claims 10 and 12-14 under §112.

With regard to the other claim amendments, Applicant amends claim 7 to further include the suction fan motor, an airflow path existing from the nozzle assembly, and at least one motor for driving at least one of the first and second agitator. In view of these amendments, Applicant cancels claims 9 and 15. Applicant also amends claim 17 to further require that one of the two signals of the agitator motor control circuit has a fixed duty cycle of less than 1.0. In addition to these amendments, Applicant also adds new claims 26-28. Claim 26 represents originally presented claim 12 in independent form, while claims 27 and 28 are substantively identical to claims 13 and 14, respectively.

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Turning to the substantive issues, the Examiner rejects claims 7-11, 15, 17, and 21 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,654,927 to Novinger (the “‘927 Patent”). Claims 12-14, 16, and 21 are also rejected as being obvious in view of the ‘927 Patent. This patent discloses a “side sweeping” vacuum cleaner including a nozzle 10 having two agitators or brush rolls 11A, 11B. A single agitator motor 13 drives both brush rolls 11A, 11B and creates suction. Alternatively, agitator motors 48A, 48B each drive a single brush roll 11A, 11B. Each agitator motor 48A, 48B may drive a “suction pump” 15 for creating suction in the vacuum cleaner. The “suction pump” is nothing more than a passive structure that rides on the shaft of the agitator motor 13, 48A, or 48B. In other words, there is absolutely no motor structure in the ‘927 Patent for creating suction independent of the agitator motor. Electrical switches allow the user to run the motors 48A, 48B at different speeds. In one embodiment, the ‘927 Patent discloses that a “light dimmer” mounted on a handle 12B of the vacuum cleaner serves as a switch for modifying the speed of one of the motors 48A, 48B. The switch may be configured so that rotation of a portion of the handle 12B results in rotation of the switch.

In stark contrast, Applicant’s claims 7 and 17 require two motors, with a suction fan motor for providing a suction airflow during use and an agitator motor coupled to at least one agitator. Nowhere does the ‘927 Patent teach or suggest a suction fan motor separate from the motor coupled to the agitators. Instead, this patent only discloses agitator motors having a passive structure or “suction pump” attached to the shaft of the motor to create suction for the vacuum cleaner. Although this “suction pump” moves air/creates suction, its movement entirely depends on movement of the agitator motor. As previously mentioned, there is absolutely no structure in the ‘927 Patent for creating suction independent of the agitator motor.

Even if the Examiner wishes to consider one of the two motors 48A, 48B in the ‘927 Patent as a suction motor and the other an agitator motor, these motors are not separated by

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an airflow path existing from the nozzle assembly, as required by Applicant's claims 7 and 17. Instead, they are both positioned in the nozzle assembly and, therefore, cannot be separated by an airflow path existing *from* the nozzle assembly.

Since the '927 Patent fails to teach each and every element of Applicant's claims 7 and 17, they are not anticipated. *See Lewmar Marine, Inc. v. Bariant, Inc.*, 3 USPQ2d 1766, 1768 (Fed. Cir. 1987) (finding that "[a]nticipation under 35 U.S.C. §102 requires the presence in a single prior art disclosure of each and every element of a claimed invention"). By their dependency either directly or indirectly on claim 7 or 17, Applicant respectfully submits that pending claims 8, 10, 11, 15, and 21 are also not anticipated.

Besides failing to anticipate Applicant's claims, contrary to the assertion made in the Office Action, the '927 Patent also fails to render any of the pending claims obvious. With regard to claims 7, 8, 10, and 11, modifying the vacuum cleaner of the '927 Patent to include an agitator motor and a separate suction fan motor would require a complete redesign, thereby modifying the principle of operation of the vacuum cleaner. First, the vacuum cleaner would require a modification to the body or canister section to receive the additional motor. This would require reshaping the body or canister, along with creating a mount system for holding the additional motor in place. Also, the airflow porting from the nozzle assembly to the separate suction motor would need to be changed for the vacuum to work correctly. Next, the electrical system for the vacuum cleaner would need modification. The motor control circuit would have to be remodeled to compensate for the addition of the suction fan motor. Also, the power distribution component of the circuit would require complete modification to account for the additional power necessary to run the suction fan motor. Since the addition of the suction fan motor would completely change the operation of the vacuum cleaner in the '927 Patent, as well as requiring a complete redesign of the same, the '927 Patent fails to render claims 7, 8, 10, and 11 obvious. *See In re Ratti*, 123 USPQ 349, 352 (CCPA 1959) (finding teachings of a reference are not sufficient to render

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claims *prima facie* obvious when the proposed modification would require a substantial reconstruction and redesign, as well as a change in the basic principle of operation, of the prior art invention being modified).

The Examiner also cites the '927 Patent to support her rejection of claims 12-14, 16, and 21. Claims 12-14, and 21 (along with amended claim 17) each require that an output of the agitator motor control circuit has a fixed duty cycle of less than 1.0. Nowhere does the '927 Patent ever mention an agitator motor control circuit with this type of output. Instead, it only mentions use of an electrical switch on the handle of the vacuum cleaner. This mere mention of a switch does not equate to an agitator motor control circuit with an output having a duty cycle of less than 1.0. There is no mention in the '927 Patent of pulsing the motor to drive it at the desired speed or any other teaching that suggests Applicant's duty cycle limitation. The Examiner does not disagree with this contention, as she is unable to point to where the '927 Patent provides the suggestion of this limitation. Instead, she makes the factually unsupported statement that "it would be obvious to one of ordinary skill in the art to determine the most appropriate duty cycle in Novinger [the '927 Patent] to allow for the most effective rotation of the agitators." Since the law requires the Examiner to base her rejections on supported facts and not assumptions, the Examiner has failed to establish a *prima facie* case of obviousness and the rejections should be withdrawn. See *In re Wilson*, 165 USPQ 494, 496 (CCPA 1970) (finding that "[t]o establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art"). Traditional vacuum cleaners plugged into an a/c outlet run motors on sinusoidal cycles having a duty cycle of 1.0. As there is no indication of any other power configuration taught by the '927 Patent, the Examiner has failed to establish that the '927 Patent renders any of the claims obvious.

Similarly, with regard to claim 16, the '927 Patent never teaches or suggests a switch wherein operation of the switch changes resistor connections such that a voltage input to an

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analog to digital converter falls within a specified input range. The ‘927 Patent only generally teaches a switch and never makes mention of the switch configuration of claim 16. Since the ‘927 Patent fails to teach or suggest the limitations of claim 16, it does not render it obvious.

Next, the Examiner cites U.S. Patent App. Pub. No. US 2004/0134014 to Hawkins et al. (the “‘014 Application”) to reject claims 1-6, 17-20, and 22-25 as being obvious. This application teaches a vacuum cleaner 100 having a body 124 attached to a nozzle assembly or “brushroll housing” 120a, 120b. The body houses a vacuum motor 130 that provides a vacuum source for the cleaner.

The brushroll housing 120a, 120b contains a rotatable brushroll 106 and a variable speed motor 105 for rotating the brushroll 106. A multiple-select brushroll switch 102 controls the speed of the motor 105. The ‘014 Application discloses that the switch may be a slide or dial having a number of user-selectable positions that correspond to various brushroll speeds.

Similar to the ‘927 Patent previously discussed, the ‘014 Application fails to teach or suggest an agitator motor control circuit having an output that is a signal having a fixed duty cycle of less than 1.0, as required by claims 1-6, 17-20, and 22-24. The ‘014 Application also fails to teach the substantially repeating rectangular voltage waveform with a fixed duty cycle of claim 25. Instead, the ‘014 Application merely mentions a switch for varying the speed of the agitator. Identical to the analysis of the ‘927 Patent, this inclusion of a switch for varying the speed does not equate to a circuit having an output signal with a fixed duty cycle. As before, absent a teaching of a duty cycle, traditional vacuum cleaner motor operation consists of a/c power with a sinusoidal cycle having a duty cycle of 1.0. Nowhere in the Office Action is the Examiner able to point to where the ‘014 Application provides a teaching or suggestion of a fixed duty cycle of less than 1.0, as required by claims 1-6, 17-20, and 22-24, nor the repeating rectangular voltage waveform with a fixed duty cycle of claim

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25. Accordingly, since the '014 Application fails to teach or suggest the limitations of Applicant's claims, a *prima facie* case of obviousness cannot be established. *In re Wilson*, 165 USPQ at 496.

In addition to arguing that claims 1-6, 17-20, and 22-25 are obvious in view of the '014 Application, she cites U.S. Patent No. 5,881,430 to Driessen et al. (the "‘430 Patent") to make the same rejections. The '430 Patent teaches a vacuum cleaner having a "suction attachment" 7 that houses a motor 45 that drives a brush 41. A separate motor 25 positioned in a housing 1 drives a suction unit 23. This patent discloses a switch 47 having multiple positions that correspond to different speeds of rotation of the brush 41.

As with the other references previously discussed, the '430 Patent only makes general reference to a switch that varies the speed of the brush or agitator. Nowhere does this patent teach or suggest an agitator motor control circuit having an output that is a signal having a fixed duty cycle of less than 1.0, as required by claims 1-6, 17-20, and 22-24, nor the substantially repeating rectangular voltage waveform with a fixed duty cycle, as required by claim 25. Again, the Examiner's rejections rely on unsupported assertions and she has failed to establish a *prima facie* case of obviousness.

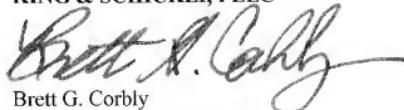
Similarly, Applicant's new claims 26-28 (which relate to originally presented claims 12-14) each require an agitator motor control circuit having an output that is a signal having a fixed duty cycle of less than 1.0. For the aforementioned reasons, none of the references cited in the Action teach or suggest a vacuum cleaner having this configuration of circuit. Accordingly, these claims should be allowed.

In view of the foregoing, Applicant respectfully requests a Notice of Allowance for claims 1-8, 10-14, and 16-28. If any matters require further attention, the Examiner is requested to contact the Applicant's attorney at the telephone number below. The undersigned authorizes the deduction of any necessary fees from Deposit Account No. 11-0978.

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